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03500.017883

PATENT APPLICATION



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re Application of:	)	
HIROSHI AOTO ET AL.	)	Examiner: Shih Wen Hsieh
	)	
Application No.: 10/769,765	)	Group Art Unit: 2861
	)	
Filed: February 3, 2004	)	Allowed: November 21, 2005
	)	
For: DIELECTRIC FILM STRUCTURE,	)	Confirmation No.: 8910
PIEZOELECTRIC ACTUATOR:	)	
USING DIELECTRIC ELEMENT	)	
FILM STRUCTURE AND INK JET	)	
HEAD	)	January 9, 2006

**Mail Stop Issue Fee**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

FOURTH INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the enclosed Form PTO-1449. Copies of the listed documents are enclosed.

The listed documents were cited in an Official Letter/Search Report dated November 30, 2005, issued by the Korean Patent Office in a corresponding foreign application. A copy of the Official Letter/Search Report is also enclosed.

Regarding the listed documents, Applicants wish to make the following remarks.

*Lin et al.* discloses that for a PZT(001) film on an Si substrate through STO, the half-width value out of plane is 2.0°. However, it fails to show the arrangement for “in plane.”

KR 2002-86461 discloses that a ferroelectric film such as PbTiO<sub>3</sub> is used for a piezoelectric element used in an ink jet head. However, it fails to show the crystallization of the ferroelectric film.

*Okawa et al.* merely discloses that a PbTiO<sub>3</sub> film is formed on an MgO substrate and a quartz substrate in an orientation of (100), (001) and (111).

#### STATEMENT UNDER 37 C.F.R. §1.97(e)

Each item of information in this Information Disclosure Statement was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing date of this Statement.

#### FORMAL MATTERS

Enclosed herewith is a check for the required fee of \$180.00 to cover the fee for this Information Disclosure Statement under 37 C.F.R. § 1.97(d)(2). Please charge any additional fee and credit any overpayment to our Deposit Account No. 06-1205.

#### NOTE

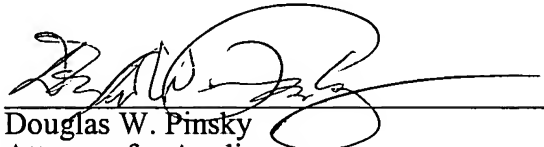
Applicants note that the previous Information Disclosure Statement, which was entitled “Second Information Disclosure Statement” and filed on October 13, 2005, was actually the third Information Disclosure Statement filed in the subject application.

CONCLUSION

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

Applicants' undersigned attorney may be reached in our Washington D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

  
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